

Applic. No. 10/667,717

Amdt. dated December 26, 2006

Reply to Office action of August 25, 2006

Remarks/Arguments:

Reconsideration of the application is requested.

Claims 1-14, 16, 18, and 20-24 remain in the application.

Claims 15, 17, and 19 were previously cancelled.

In the fourth paragraph on page 2 of the above-identified Office action, claims 1-14, 16, 18, and 20-24 have been rejected as being obvious over Zimmer et al. (U.S. Patent No. 6,873,580 B2) (hereinafter "Zimmer") in view of Yanagawa et al. (U.S. Patent No. 6,346,695 B2) (hereinafter "Yanagawa") and further in view of Swanson et al. (U.S. Patent No. 6,535,473 B1) (hereinafter "Swanson") under 35 U.S.C. § 103.

As will be explained below, it is believed that the claims were patentable over the cited art in their original form and the claims have, therefore, not been amended to overcome the references.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Claim 1 calls for, *inter alia*:

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at least one of the supporting element and the deflection device being produced from glass and being nondetachably connected to the substrate by an anodic bond.

The Zimmer reference discloses a method of attaching components of an optical head. The components are the spacer blocks (34 and 36). Zimmer does not disclose that the spacer blocks contain glass. However, a glass component is required for anodic bonding.

Moreover, the method disclosed Zimmer is completely different than anodic bonding. Zimmer discloses that a UV adhesive is used to attach the components. Zimmer discloses that the "UV adhesive may be applied to surfaces of the spacer blocks 34 and 36 that mate with the OE block 44 of the OPA 14. The OPA 14 is moved with respect to submount 16 until the laser beam emitted by laser diode 30 coincides with the optical axis of objective lens 22. Thereafter, the UV adhesive is cured into a solid bond between the DE block 44 and spacer blocks 34 and 36" (column 10, lines 2-11). Therefore, it would logically follow that the spacer blocks (34 and 36) are applied to substrate (20) in the same manner, providing the advantage that the spacer blocks (34 and 36) can be connected with the substrate (20) with the UV adhesive, but are not immediately

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fixed thereto, so that an adjustment can still be conducted without the danger that the spacer blocks might be significantly misaligned. Considering this advantage, Zimmer teaches away from the use of an anodic bond instead of the UV adhesive. This is because connecting the blocks before fixing the placement of the blocks is not possible when using anodic bonding.

The Swanson reference discloses a magneto-optical head, which includes an upper and a lower block (Fig. 9). Anodic bonding can connect both blocks to each other. Swanson discloses that "the remaining constituent parts [which are the upper and lower blocks] may be fabricated in a set of two GAP wafers 250" (column 4, lines 51-52). Swanson discloses that the two GAP wafers can be replaced by a glass substrate and a silicon substrate in the case of anodic bonding (column 5, lines 6-9). Therefore, Swanson discloses that the use of anodic bonding is for wafers which are of much larger size than the spacer blocks (34 and 36) of Zimmer. Accordingly, Swanson does not provide a person of ordinary skill in the art any motivation for attaching the spacer blocks (34 and 36) of Zimmer with anodic bonding.

Furthermore, Swanson does not disclose that the micro-machined mirror (301), which might be comparable in size and function

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to the deflection element (34) of Zimmer, is attached by anodic bonding. Therefore, Swanson does not provide a person of ordinary skill in the art any motivation for attaching the spacer blocks (34 and 36) of Zimmer with anodic bonding.

Swanson discloses aligning the wafers (250), bonding them together and dicing them to yield individual heads (201/221) (column 4, lines 52-54). Swanson discloses that it is possible to produce the individual heads (201/221) in such a way because optical elements, such as lenses, are integrated (especially etched) in the wafers, which are bonded together. However, Zimmer discloses discrete elements which are individually attached to the substrate, and which must be aligned within manufacturing tolerances, so that the optical pick-up unit will work. Accordingly, because Swanson and Zimmer disclose completely different methods of producing optical heads, there is no motivation for a person of ordinary skill in the art to combine the references.

Moreover, another reason why a person of ordinary skill in the art is not provided with any motivation to combine Swanson and Zimmer is because it would result in a technical disadvantage from the perspective of Zimmer. Based on Swanson, a person of ordinary skill in the art would bond together a substrate wafer of silicon and glass wafer, where the spacer blocks (34

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and 36) would be etched into the glass wafer. Then the laser diode (30) and light detectors (40 and 42) could only be arranged after etching. Fixing these components precisely into the etched cavities would be very difficult to realize and would influence manufacturing tolerances in a negative way. Therefore, Zimmer teaches away from the Swanson reference.

Accordingly, as seen from the above-given remarks, a person of ordinary skill in the art is not provided with any motivation to consider a method such as anodic bonding as an alternative to the UV adhesive.

Also, it is a requirement for a *prima facie* case of obviousness, that the prior art references must teach or suggest all the claim limitations.

As seen from the above-given remarks, the references do not show or suggest at least one of the supporting element and the deflection device being produced from glass and being nondetachably connected to the substrate by an anodic bond, as recited in claim 1 of the instant application.

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The references applied by the Examiner do not teach or suggest all the claim limitations. Therefore, it is believed that the Examiner has not produced a *prima facie* case of obviousness.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claim 1. Claim 1 is, therefore, believed to be patentable over the art and since all of the dependent claims are ultimately dependent on claim 1, they are believed to be patentable as well.

In view of the foregoing, reconsideration and allowance of claims 1-14, 16, 18, and 20-24 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel respectfully requests a telephone call so that, if possible, patentable language can be worked out.

If an extension of time for this paper is required, petition for extension is herewith made.

Petition for extension is herewith made. The extension fee for response within a period of one month pursuant to Section

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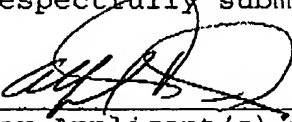
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1.136(a) in the amount of \$120 in accordance with Section 1.17
is enclosed herewith.

Please charge any other fees which might be due with respect
to Sections 1.16 and 1.17 to the Deposit Account of Lerner
Greenberg Stemer LLP, No. 12-1099.

Respectfully submitted,



For Applicant(s)

Alfred K. Dassler
52,794

AKD:cgm

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Lerner Greenberg Stemer LLP
Post Office Box 2480
Hollywood, FL 33022-2480
Tel: (954) 925-1100
Fax: (954) 925-1101